

proceed from the region of the "zona"; and probably have their origin in the cells by which the latter is surrounded. If so, the author thinks we cannot suppose them to arise in any other way than that which, according to his observations, appears to be the universal mode of reproduction; namely, by division of the nuclei of the parent cells. Nor can we suppose that minuteness is any hinderance to their subsequent increase by the same means.

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December 17, 1840.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The following communications were made to the Society, viz.

1. "Present state of the Diamond Mines of Golconda." By T. J. Newbold, Esq., of the Madras Army, A.D.C. to Major-General Wilson, K.B. Communicated by S. H. Christie, Esq., M.A., Sec. R.S.

The author gives an account of the tract of country in which the diamond mines of Golconda are situated, and of the processes by which the diamonds are obtained. The latter consist merely in digging out the rolled pebbles and gravel, and carrying them to small square reservoirs, raised on mounds, having their bottom paved with stones, and then carefully washing them. Dry weather is selected to carry on these operations, in order to avoid the inconvenience and expense of draining. A description is then given of the mines of Banaganpully, Munimudgoo, Condapilly, Sumbhulpoor, and Poonah in Bundlekund.

2. "Magnetic-term Observations made at Milan." By Professor Carlini, Director of the Observatory at that place: also "Magnetic-term Observations made at Prague." By Professor Kreil, Director of the Observatory at that place.

3. "On the Production of Heat by Voltaic Electricity." By J. P. Joule, Esq. Communicated by P. M. Roget, M.D., Sec. R.S.

The inquiries of the author are directed to the investigation of the cause of the different degrees of facility with which various kinds of metal, of different sizes, are heated by the passage of voltaic electricity. The apparatus he employed for this purpose consisted of a coil of the wire, which was to be subjected to trial, placed in a jar of water, of which the change of temperature was measured by a very sensible thermometer immersed in it: and a galvanometer, to indicate the quantity of electricity sent through the wire, which was estimated by the quantity of water decomposed by that electricity. The conclusion he draws from the results of his experiments is, that the calorific effects of equal quantities of transmitted electricity are pro-

portional to the resistances opposed to its passage, whatever may be the length, thickness, shape, or kind of metal which closes the circuit : and also that, *cæteris paribus*, these effects are in the duplicate ratio of the quantities of transmitted electricity ; and consequently also in the duplicate ratio of the velocity of transmission. He also infers from his researches that the heat produced by the combustion of zinc in oxygen is likewise the consequence of resistance to electric conduction.

The President informed the Meeting that the Council had voted the following Address to Her Majesty, the Queen :—

*“ To the Queen’s Most Excellent Majesty.*

“ The Humble Address of the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge.

“ Most Gracious Sovereign,

“ We, Your Majesty’s most dutiful and loyal subjects, the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge, approach Your Majesty with the most heartfelt satisfaction at the birth of the Princess Royal. We feel the deepest gratitude to the Almighty Disposer of events for His gracious protection vouchsafed to Your Majesty in your late confinement, and we ardently pray that the same protection may continue to be long afforded to a life so precious to all the inhabitants of these realms.

“ It is also our most ardent hope that Your Majesty’s daughter may grow up to be a pattern of every virtue that can adorn and dignify her high station, and that Your Majesty may continue to be blest with every happiness, both public and private.”

The President also stated to the Meeting, that the Council had adopted the following Address to His Royal Highness Prince Albert, of Saxe Coburg and Gotha :—

*“ To His Royal Highness Prince Albert of Saxe-Coburg and Gotha, K.G., F.R.S.*

“ The humble Address of the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge.

“ May it please Your Royal Highness,

“ We, the President, Council, and Fellows of the Royal Society of London for improving Natural Knowledge, beg leave to tender to Your Royal Highness our warmest congratulations on the safety and recovery of Your Royal Highness’s Consort, our beloved Sovereign, and on the birth of Your Royal Highness’s daughter. That she

may be the bond of your connubial happiness is our most sincere wish, and also that Divine Providence may long, very long, preserve Your Royal Highness's life, in possession of every blessing, both as a husband and as a father."

The Society then adjourned over the Christmas recess, to meet again on the 7th of January next.

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January 7, 1841.

Sir JOHN W. LUBBOCK, Bart., V.P. and Treas., in the Chair.

Julius Jeffreys, Esq., was balloted for and duly elected into the Society.

The following communication was read, viz.—

"Variation of the Magnetic Declination, Horizontal Intensity, and Inclination observed at Milan on the 23rd and 24th December 1840." Communicated by Professor Carlini, Director of the Milan Observatory.

A paper was also read, entitled, "On the Chorda dorsalis." By Martin Barry, M.D., F.R.S.S. L. & E.

The author of this communication, after pointing out the similarity in appearance between an object noticed by him in the mammiferous ovum, and the incipient chorda dorsalis described by preceding observers in the ova of other Vertebrata, mentions some essential differences between his own observations and those of others as to the nature and mode of origin of these objects, and their relation to surrounding parts. Von Baer, the discoverer of the chorda dorsalis, describes this structure as "the axis around which the first parts of the fœtus form." Reichert supposes it to be that embryonic structure which serves as "a support and stay" for parts developed in two halves. The author's observations induce him to believe that, instead of being "the axis *around which* the first parts of the fœtus form," the incipient chorda is the last-formed row of cells, which have pushed previously-formed cells farther out, and that, instead of being merely "a support and stay" for parts developed in two halves, the incipient chorda occupies the centre out of which the "two halves" originally proceeded as a single structure, and is itself in the course of being enlarged by the continued origin of fresh substance in its most internal part.

The author enters into a minute comparison of the objects in question; from which it appears that the incipient chorda is not, as Baer supposed, developed into a globular form at the fore end, but that the linear part is a process from the globular; and that the pellucid cavity contained within the latter—a part of prime importance, being the main centre for the origin of new substance—is not mentioned